



Why The Water Cycle Needs To Be Taught Hands On.

Lynessa Reis
Fourth Grade Teacher
Denmark Elementary School



Introduction

The purpose of this project is to find other activities to add or replace parts of the Land and Water unit that is taught in fourth grade curriculum.

Where is Denmark?



A stylized illustration of a bright yellow sun with a blue circle in the center, partially obscured by white and light blue clouds. The background is a solid blue color with a subtle pattern of lighter blue squares.

Who Makes Up Denmark?

According to the Wisconsin Department of Public Instruction Website, Denmark Elementary School has about 500 students.

Of those 500 students, about 13% of them have special needs. The elementary school is grades 1-5, with roughly 100 kids per grade. Each grade has either 4 or 5 sections. The grade this research affected was fourth. There are four sections with 102 kids. Only one class received the extra activities

Denmark Nature Center





Research question

- ◊ Do additional hands on activities about the water cycle improve the students' abilities to understand the imperative relationship between land and water?



Research Process

With one fourth grade class I added the additional activities while the other class was taught the original curriculum. All the students will take the pre and post assessment.



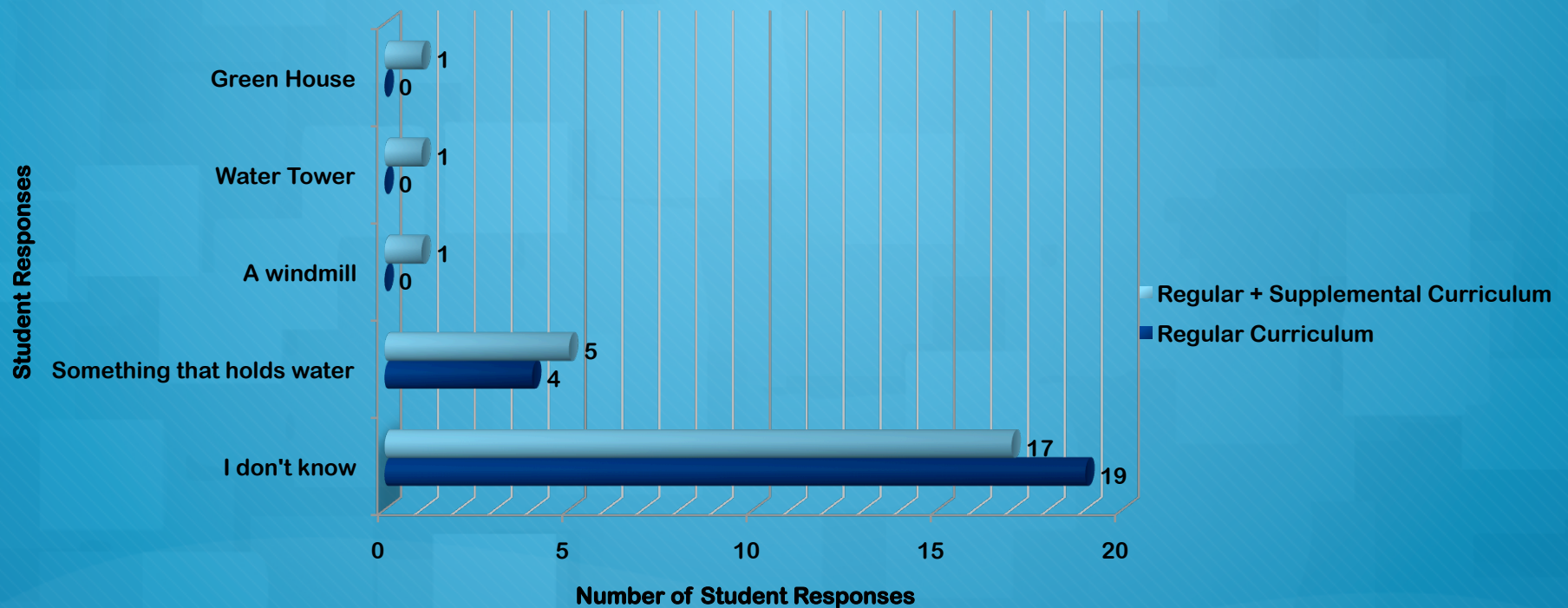
Pretest

- N = 23 for class with regular curriculum
- N = 25 for class with regular + supplemental curriculum

Pre Assessment Question 1

What is a watershed?

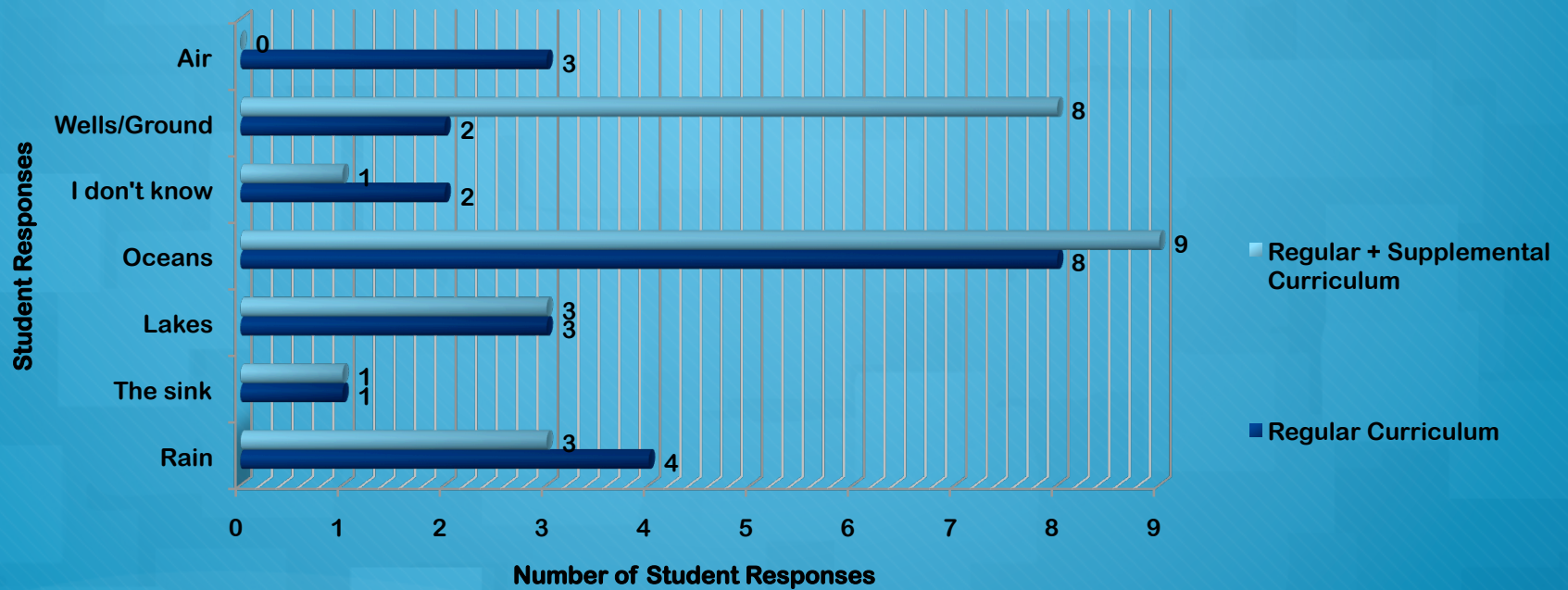
Pre Assessment Question 1- What is a watershed?



Pre Assessment Question 2

Where does our water come from?

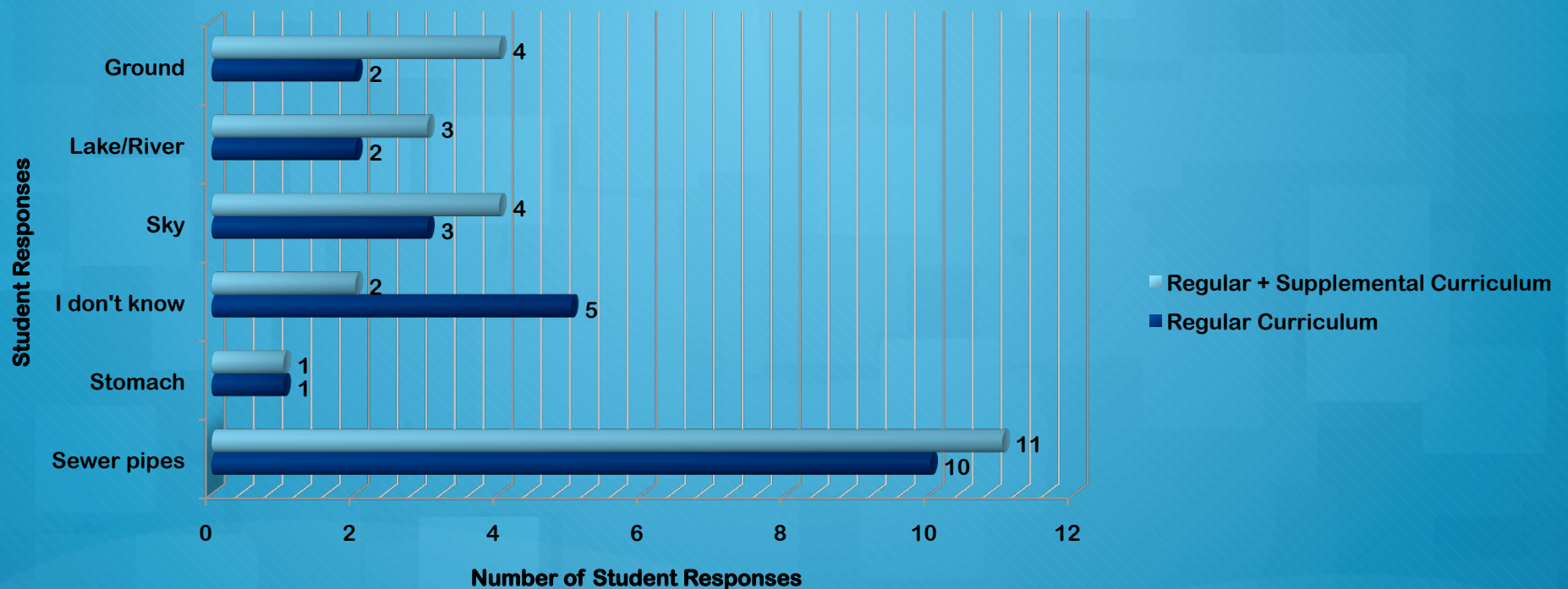
Pre Assessment Question 2- Where doe our water come from?



Pre Assessment Question 3

Where does our water go?

Pre Assessment Question 3- Where does our water go?





What Did We Do?

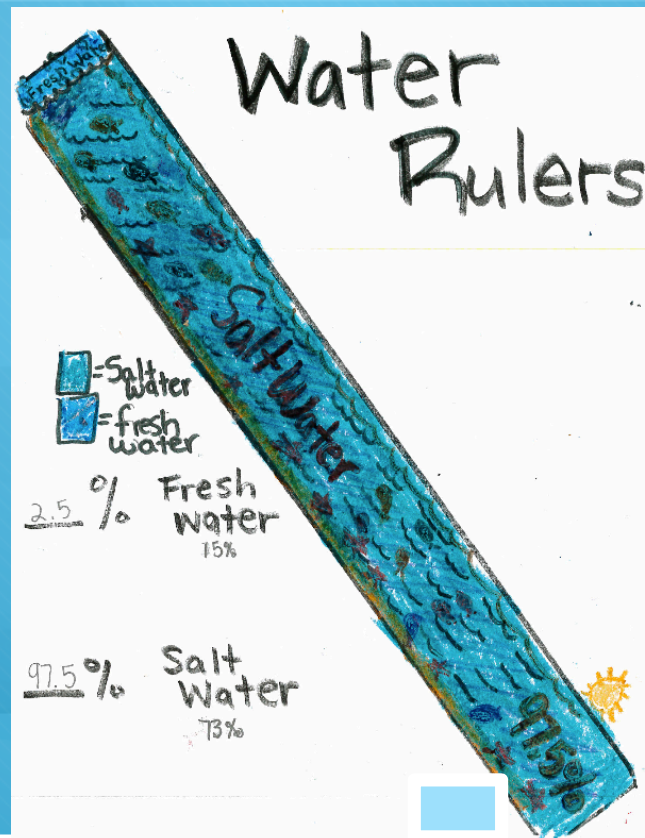
Indoor Activities

- Water Rulers
- Discussed and located watersheds
- Water Cycle Game
- Put together presentation of outdoor water cycle
- Discussed how to help preserve our water

Outdoor Activities

- Went into nature center to observe water cycle
- Took pictures of all the parts of the water cycle in nature
- Went outside and picked up pollution that could have entered our watershed
- Located where runoff/ storm water goes from school

Examples of Water Rulers





Findings...

- The students had NO CLUE how little water is available to us
- Students knew very few ways that they could help preserve water
- Many students were amazed that humans cannot drink saltwater

A stylized illustration of a bright yellow sun with a small blue circle in the center, partially obscured by white, fluffy clouds. The background is a solid blue color.

Examples of Water Cycle Game and Sop, the Drop



Findings...

- Students were finally able to see why it is called a cycle because they physically walked from the cloud center to the stream center to the cloud center to the field center and so on
- Students realized that sometimes water is evaporated before it hits the ground, animal, or surface
- By writing the story of a water drop, students had to think step by step. They also had to think in a new way to describe that experience of moving through the water cycle.

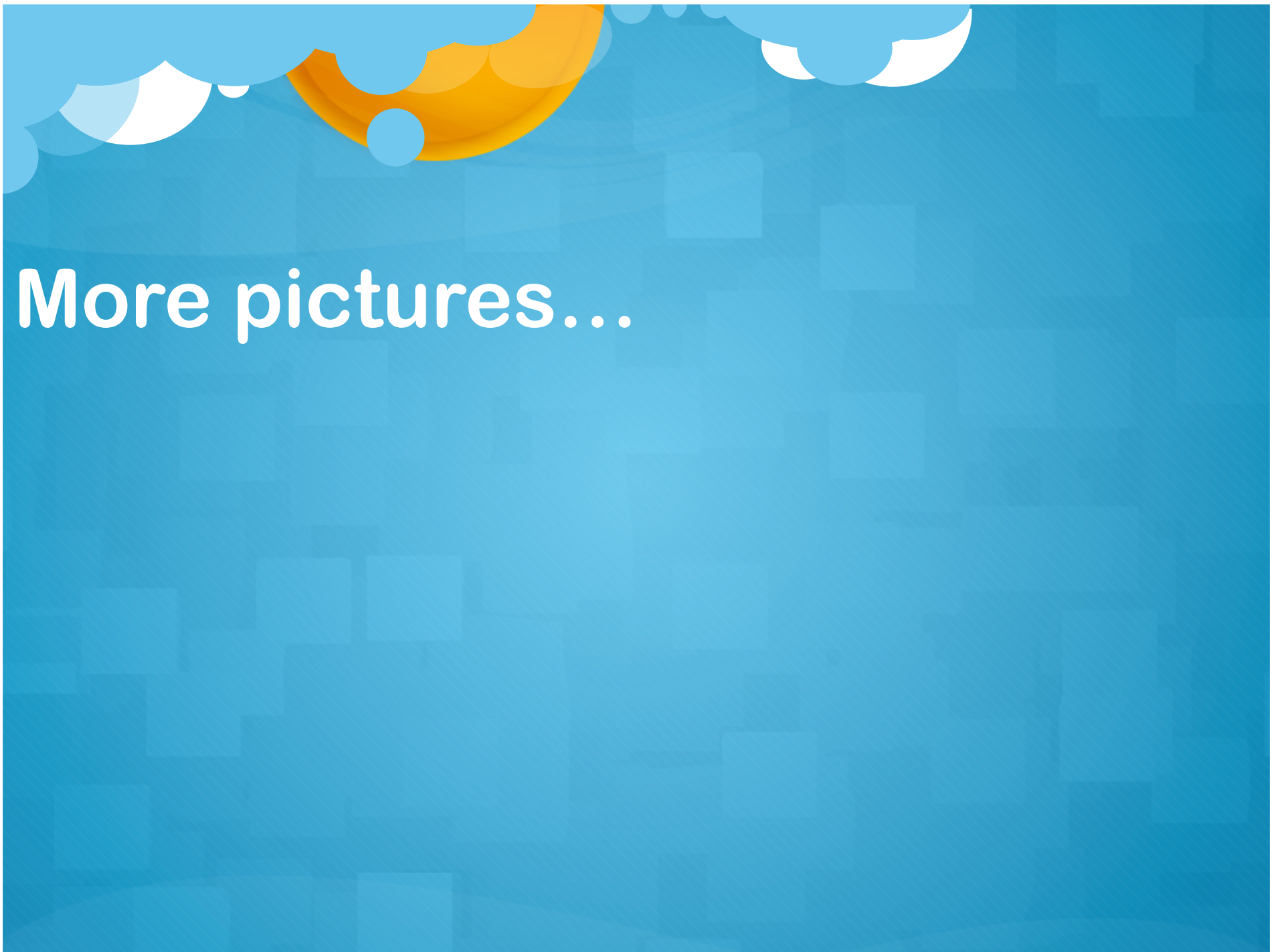


Water Cycle Exploration Project

- Students were given twenty minutes to go out into the Nature Center to find evidence of the water cycle (this was after a heavy rain)
- They needed to take pictures of the evidence and be able to explain what part of the cycle was in the picture
- The following day, the students were able to get pictures of precipitation as well
- After the pictures were printed, the class discussed ways to represent the water cycle. They decided on making posters of each part and then put them in a cyclical position.

Pictures of Nature Center Exploration





More pictures...



Findings...

- Students were extremely motivated to use Ipods and to go outside
- They enjoyed exploring nature- especially water
- They asked many questions in order to deepen their understanding of the water cycle
- They ask daily if we get to go outside again
- The other classes ask if they can go outside too



Students Making Posters

o Movie was here...



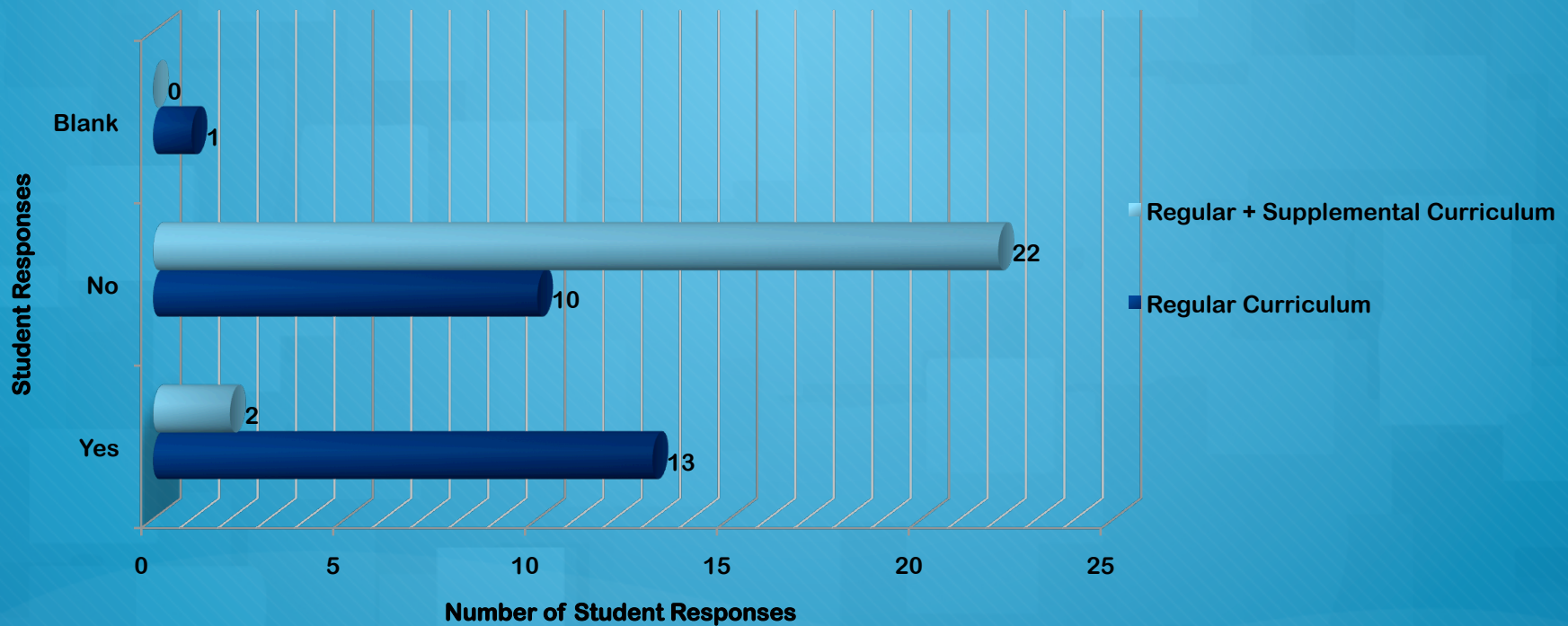
Post Assessment

- N = 24 for regular curriculum
- N = 24 for regular + supplemental curriculum

Post Assessment Question 1

Water Can Be Created.

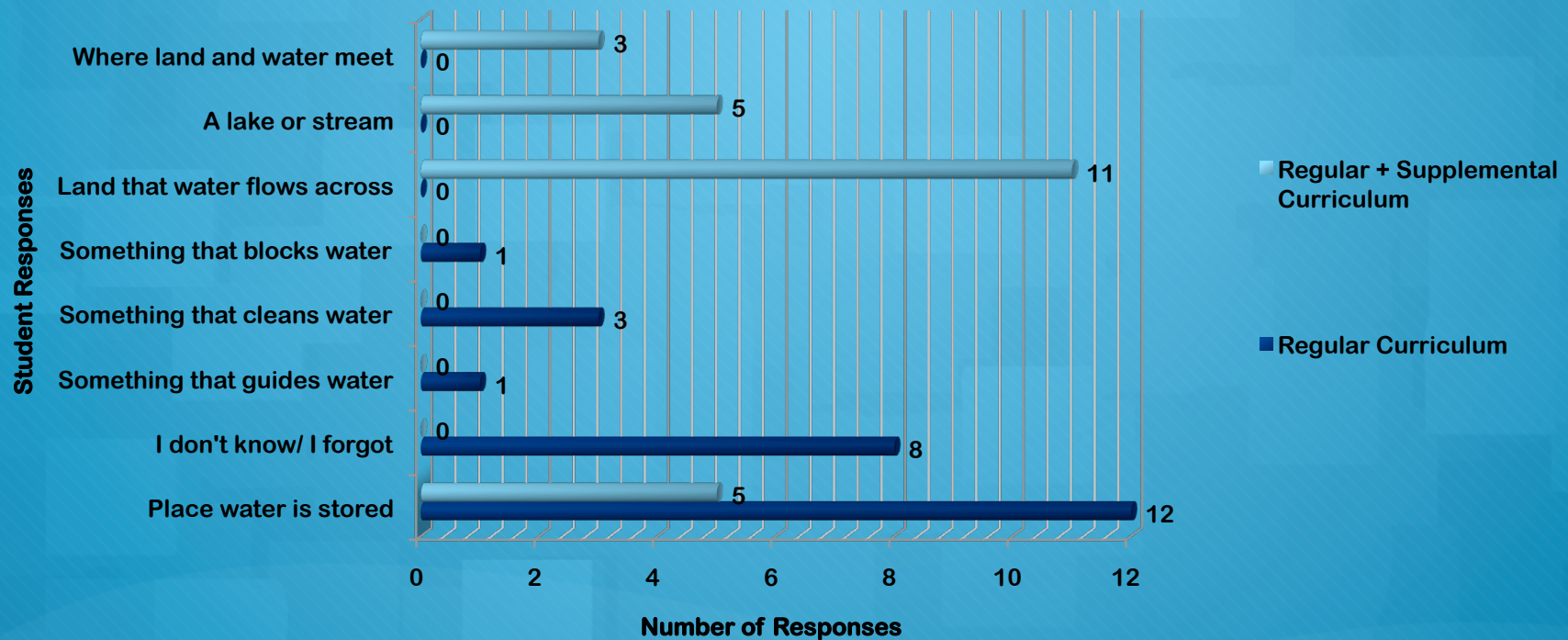
Question 1- Water Can Be Created



Question 2

What is a watershed?

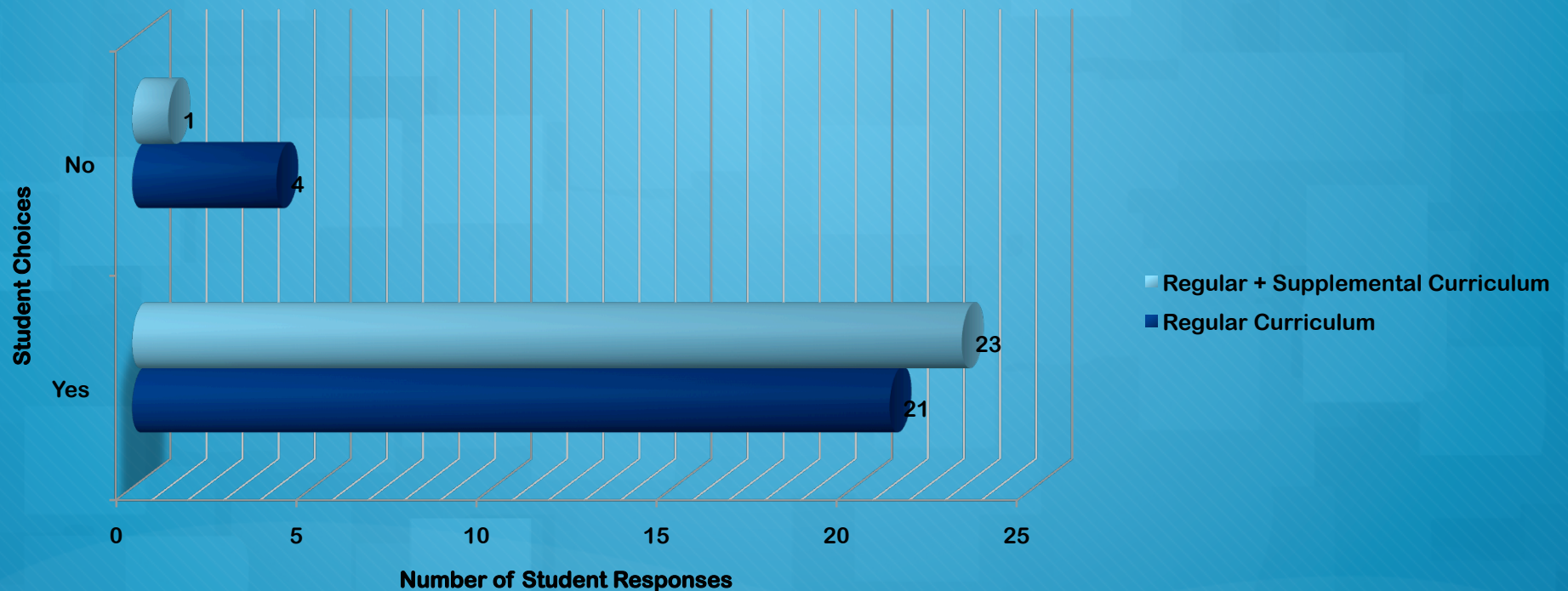
Question 2- What is a watershed?



Question 3

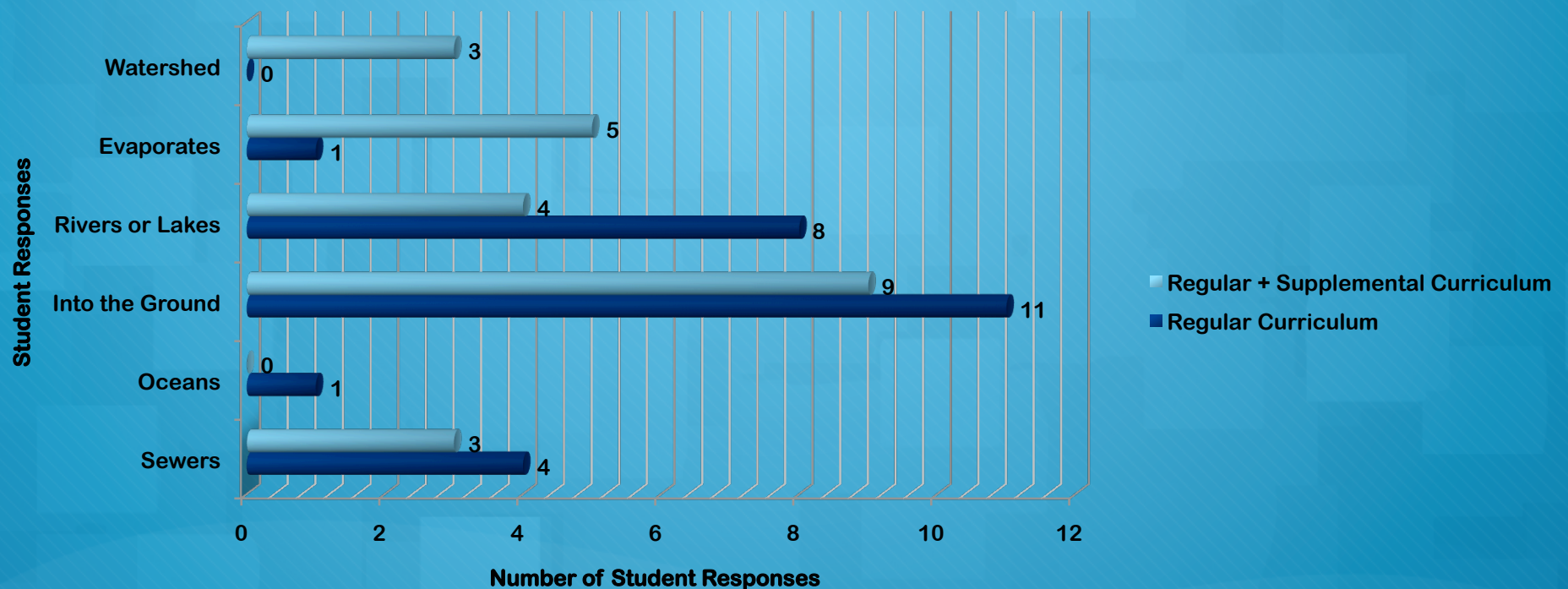
Do you believe it is necessary to think about water?

Question 3- Do you believe it is necessary to think about water?



Question 4 Where does water go after it rains?

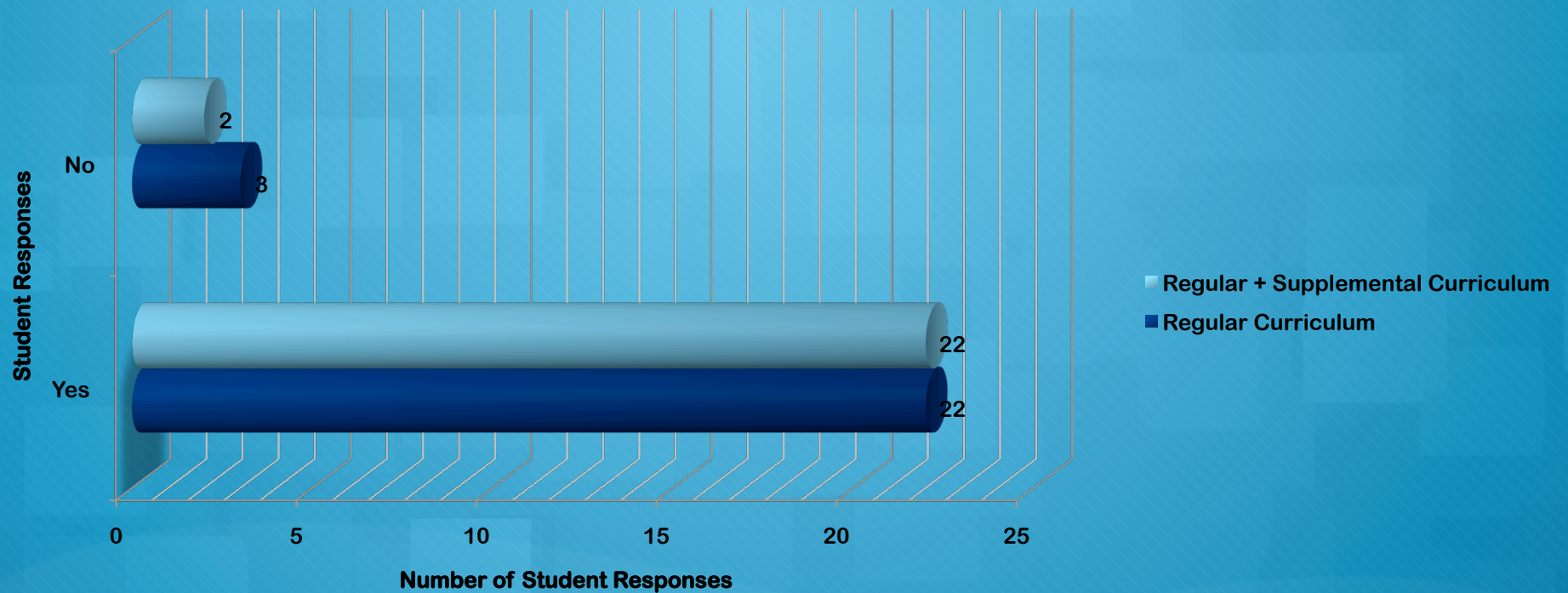
Question 4- Where does water go after it rains?



Question 5

Do Humans Affect Water?

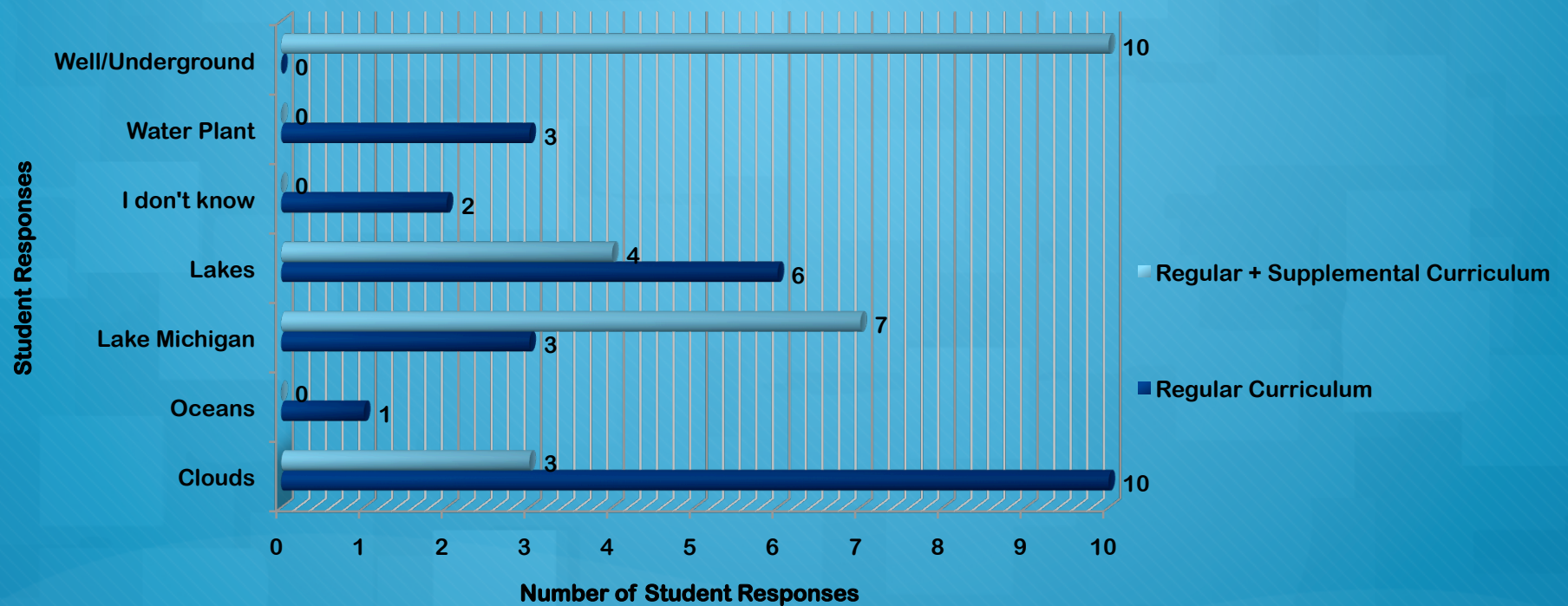
Question 5- Do humans affect water?



Question 6

Where does our water come from?

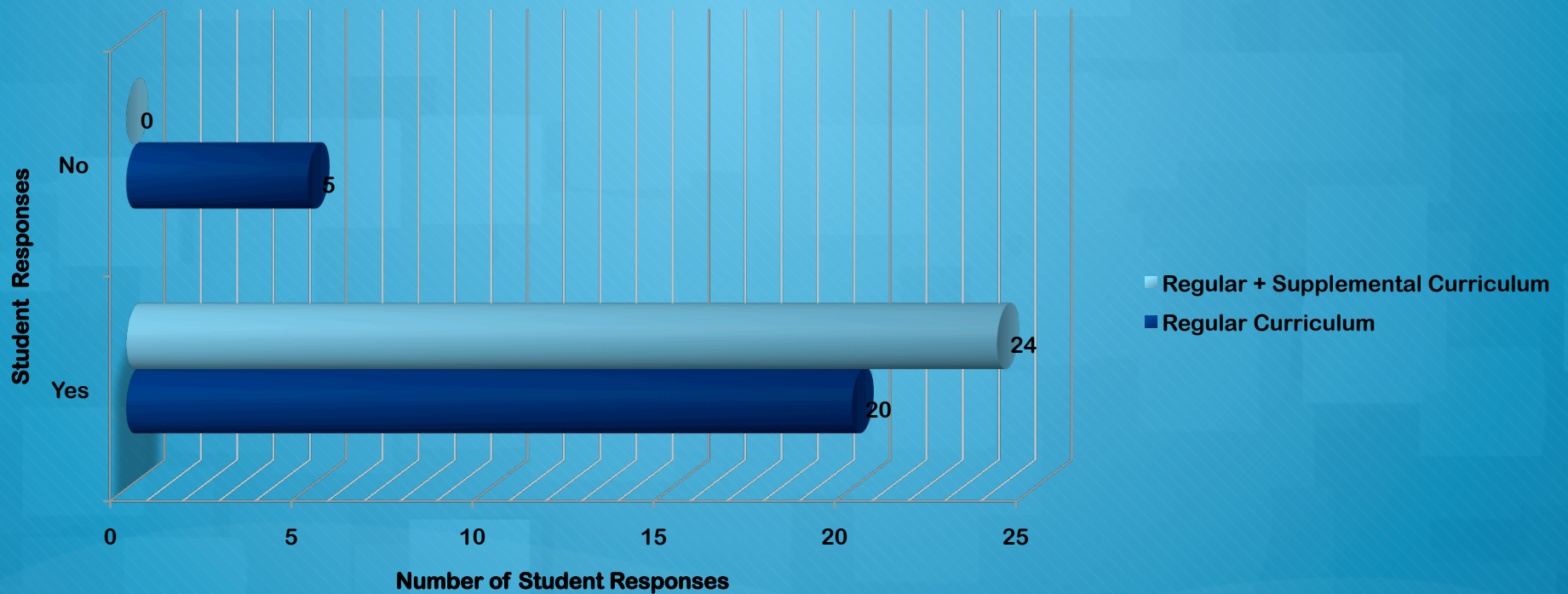
Question 6- Where does our water come from?



Question 7

I Can Affect Water.

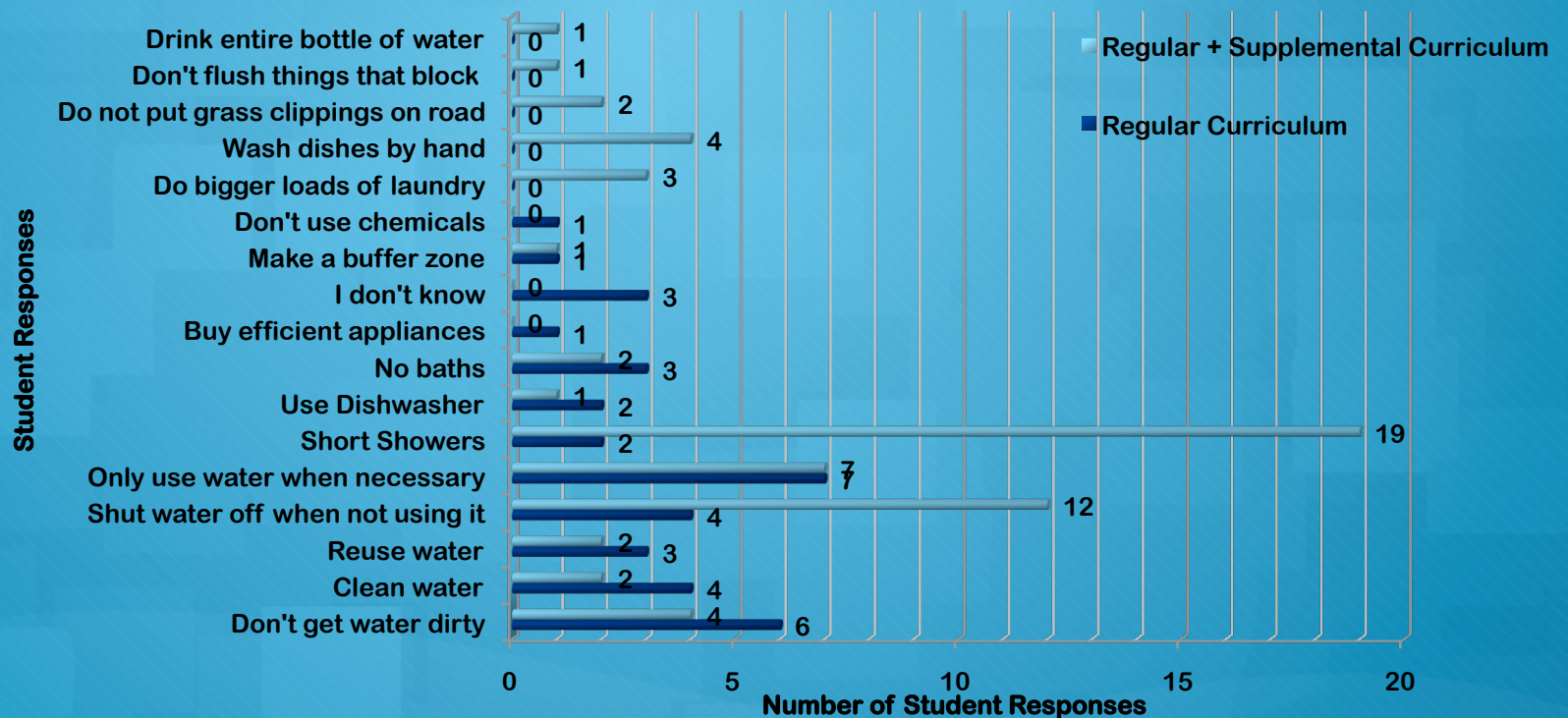
Question 7- I can affect water?



Question 8

How can YOU save water? Make a list.

Question 8- How can you help preserve/save water?





Interview

- Only the class who received supplemental curriculum took the interview
- N= 23



Did you enjoy learning about the water cycle using the Nature Center? Why or Why Not?

- o 23 Yes and 0 No
- o It shows us what we are learning- not just tells
- o We saw the actual stuff- like water on the ground
- o It gave me good examples and saw it in real life
- o I like hands on activities
- o It was a fun way to learn how the water cycle works
- o We got fresh air and its smells clean most of the time



Did you learn better or worse when you were outside? Why?

- 22 Better 1 Worse
- I get distracted outside
- I can concentrate better with fresh air and the birds' songs are calming
- I could see real life examples instead of imagine it
- I learn better when things are taught hands on
- I can see everything happening- including the water cycle
- I was able to see all the ways water is needed in the environment

An abstract graphic design featuring a large orange semi-circle on the left side. The background is a gradient of blue with various geometric shapes, including circles and rectangles, in different shades of blue. A dark blue, rounded rectangular shape is positioned diagonally across the lower half of the image. The word "Implications" is written in white, sans-serif font, slanted upwards, within this dark blue shape. There are also some white, cloud-like shapes at the top left, partially overlapping the orange semi-circle.

Implications



Problems Faced

- ◊ When adding to curriculum, TIME is always an issue
- ◊ I still am figuring what I will take out or condense the next time I teach this unit
- ◊ Having to depend on the weather could complicate some of the lesson, this year it worked out for me



How Does This Affect My Teaching?

- Next year, I will definitely add these activities to my current Land and Water science curriculum
- I will put together a binder with these activities to give to Jordan Phillippo, the other fourth grade science teacher
- All fourth graders will now be exposed to these additional hands on activities- they were not only motivational, but truly deepened the understanding



In Conclusion

- The additional hands on activities did in fact help the fourth graders to learn the imperative relationship between land and water.
- From this project, I am now wondering how the integration of technology would further impact student achievement and motivation
- I am also looking for other ways to integrate the Denmark Nature Center into other units – not just science



Questions